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(54) Title: METHODS FOR DRIVING ELECTRO-OPTIC DISPLAYS

(57) Abstract: A method for addressing a bistable electro-optic display having at least one pixel comprises applying an addressing pulse to drive the pixel to a first optical state; leaving the pixel undriven for a period of time, thereby permitting the pixel to assume a second optical state different from the first optical state; and applying to the pixel a refresh pulse which substantially restores the pixel to the first optical state, the refresh pulse being short relative to the addressing pulse.

INTERNATIONAL SEARCH REPORT

International Application No

PCT, no 03/16434

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G09G3/34 G09G3/38

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G09G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 01 07961 A (E INK CORP) 1 February 2001 (2001-02-01) the whole document ---	1-15
A	US 3 972 040 A (HILSUM CYRIL ET AL) 27 July 1976 (1976-07-27) the whole document ---	1-15
A	DE 25 23 763 A (SIEMENS AG) 9 December 1976 (1976-12-09) the whole document ---	1-15
A	EP 1 130 568 A (MINOLTA CO LTD) 5 September 2001 (2001-09-05) the whole document -----	1-15

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

A document defining the general state of the art which is not considered to be of particular relevance

E earlier document but published on or after the international filing date

L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

& document member of the same patent family

Date of the actual completion of the international search

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04/12/2003

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 03/16434

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-15

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-15

The first concept concerns a method for addressing a bistable electro-optic display,

wherein

- a pixel is driven by a first addressing pulse to a first optical state,
- when not driven over a period of time afterwards, the pixel assumes a second optical state,
- a refresh pulse, shorter than the addressing pulse, restores the pixel to the first optical state.

2. Claims: 16,17

The second concept concerns a method for addressing a bistable electro-optic medium,

wherein

- an alternating current pulse is applied to the medium.

3. Claim : 18

The third concept concerns a method for addressing a bistable electro-optic display,

wherein

- a first and a subsequent second image to be written to the display are compared,
- when writing the second image to the display, only the rows for which the image data of the first and second image differ are written.

4. Claims: 19,20

The fourth concept concerns an electro-optic display,

wherein the display comprises

- a plurality of pixels, one pixel comprising a plurality of sub-pixels differing in area,
- drive means for changing the optical state of the sub-pixels independently from one another.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/JP 03/16434

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